

THE NARROW GAUGE



THE NARROW GAUGE RAILWAY SOCIETY

No. 28 SPRING 1961

THE NARROW GAUGE

(Official Magazine of the Narrow Gauge Railway Society)

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We are very grateful to all those who have helped to produce this magazine, especially to the Festiniog Railway Society for permission to reprint an article from their magazine and for the loan of blocks; to Mr. M.Swift; and also to the owners or copyright holders of the photographs used.

Cover photo : this is from the Society's new booklet about *"Townsend Hook"* and shows the locomotive in its original state. Photo courtesy Major Taylerson.

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Editorial

One or two of our more prominent members have recently been bringing up the 'more and more is being written by fewer and fewer about less and less'; and sometimes your editor almost finds himself in agreement with them....although his variation on the theme goes something like 'there seems to be less and less written by anybody about anything' (or so it seems as far as this magazine is concerned).

One thing has become increasingly apparent. If even a quarterly magazine is to appear regularly and on time, we must have a stock of articles - especially short ones covering two, three or four pages (and preferably illustrated - we hope to use one or sometimes two new blocks an issue from now on) - so that we can plan ahead. This is particularly so when 'outside' blocks are needed to illustrate an article. If these are not available at the time, it is very helpful to have an alternative to put in at short notice (it happened with this issue - if Mike Swift had not kindly lent us two more F.R. blocks there would have been a blank page).

Alas, in spite of appeals, the articles are not coming in. It is not as though the information is not there, either. Every time the Editor goes to a meeting, he is told "...went to - Quarry a week ago...saw a most peculiar incline/wagon/loco/point they have there..." - or some such story. And what about all those people who are currently "doing research"? Would it compromise the Great Plan if you occasionally tossed us a snippet or two, say on that old coach which has always been a mystery, or the signals at BlwthrCwm, or even a note and drawing of a typical halt, or...well, you know what...

And even now we can hear the protesting cry "what about that b*** b*** (the Guardian got censured for using four-letter words, so we'll be discreet) Donegal number then?". The Editor is very sorry but the information will need a lot of sorting out and writing up, and he just has not had the time yet. Would anyone with a working knowledge of the railway like to take on the job of writing all or part of the text?

THE ST.AUSTELL & PENTEWAN RAILWAY

G.T.Wheway

Part 2 - Locomotives and Rolling Stock

The first locomotive supplied to the railway was built by Manning, Wardle & Co, of Leeds in 1873; it was that rare type among British narrow-gauge locomotives, a tender engine. The wheel arrangement was 0-6-0, with outside frames and cylinders. The driving wheels were 1'8" in diameter, the cylinders being 7" diameter by 12" stroke.

The locomotive had a very high firebox top which formed the only protection from inclement weather afforded to the crew. The small tender was carried on four wheels. Unlike most narrow-gauge lines, the Pentewan used side buffers and centre couplings on all its rolling stock and the locomotive was fitted out accordingly.

This first locomotive was given the name "Pentewan" and appears to have served the railway in splendid isolation for some years, though aided no doubt by the Company's horses. Its place was taken in 1886 by an almost identical locomotive called "Trewithen", which appropriated "Pentewan"s tender on the latter's retirement from active service. "Trewithen" however, sported a full cab, though without backsheets, for the crew's comfort.

In turn, "Trewithen"s replacement was another Manning, Wardle locomotive, of 1901 vintage. This was of completely different design to its predecessors, being an 0-6-2ST with outside frames and cylinders and a complete cab. The frames ran the full length of the locomotive, thus enclosing completely the trailing wheels, the axle of which ran in axleboxes moving in guides fixed to the main frame. The movement of these axleboxes was controlled by leaf springs mounted above them and also fixed to the frames. The leaf springs for the 20"-diameter coupled wheels were mounted in a somewhat more exposed position above the footplate.

This third locomotive rejoiced in the name of "*Canopus*"; one looked in vain above the saddle tank for a safety valve, the reason being that this essential item was mounted in the cab (as was that of "*Trewithen*").

In 1912 "Canopus" was joined by a fourth locomotive, "Pioneer", built by the Yorkshire Engine Co. in 1893 for use on Government

lines and formerly in service on the Chattenden & Upnor line in Kent. *"Pioneer"* was very different from any of the other locomotives of the Pentewan Railway, having a slightly transatlantic appearance with bar frames and outside valve gear. She was a 2-6-2ST with bar frames from the front bufferbeam to the rear coupled wheels, and plate frames thence to the rear bufferbeam; valve gear was Walschaerts. When delivered to the railway, no buffers were fitted but these were soon added to conform to the rest of the line's rolling stock. The front sheet of the cab was a very rudimentary affair, being the full width where it joined the cab roof but tapering down to about 12" wide at the firebox top. In fact the crew were exposed above waist level in the cab as the side and back sheets only extended this far.

Other details of "Pioneer" are as follows :-

Cylinders 6" diameter x 14" stroke. Leading and trailing wheels 1'6"

Driving wheels 2'6". Rigid wheelbase 5'6". Total wheelbase 14'6".

"Canopus" and "Pioneer" did the work of the railway with some forty-two four-wheeled wagons which were capable of holding four or five tons of china clay en route to Pentewan Harbour, or threeand-a-quarter tons of coal in the reverse direction. From contemporary photographs it appears that these wagons had a hand-brake on one side only. They had centre hook-and-two-link couplings and side buffers. There is no record of any brake vans so presumably the train crew had only the engine brakes to rely on. Loads up to St. Austell were up to nine full wagons, but on the down grade to Pentewan the train consisted of up to 25 wagons.

The only other vehicle owned by the railway was a four-wheeled saloon carriage, which was exclusively a "directors saloon" for use by the owner of the line. Access to the interior was by a door at one end, where a small footboard was fixed. Provision was made for two oil lamps in the roof, and the side of the vehicle bore the legend "P.R.& H.Co. No. 1", the initials standing for "Pentewan Railway and Harbour Co.".

As far as is known, all the stock was scrapped after the line closed.

JOURNEYS ON THE NARROW GAUGE

A.E.Rimmer

No. 6 - The Festiniog Railway

In view of the progress made in resuscitating the historic Festiniog Railway, it may be an appropriate time to mention a journey I made on the line in 1937, when it was still open throughout its length.

The train was the 10.20 a.m. from Portmadoc Harbour Station, headed by Double Fairlie No. 10 *"Merrdin Emrys"*, which was blowing off furiously. The usual rake of five bogie and two four-wheel coaches made up the train. One of the bogie vehicles, oddly enough, was the W.H.R. open-sided coach (now FR No. 25) in which I was travelling.

We departed on time and made a brisk run across The Cob and up to Minffordd, where empty slate trucks were shunted onto the rear of the train. A few passengers joined us and after the doors had been locked again we set off for Penrhyndeudraeth (it had been the practice for many years to lock all doors as a safety measure, in view of the sheer drops encountered on several of the slate slab walls along which the line runs).

A prolonged whistling heralded Penrhyn which we passed without stopping, the main road being crossed by a fully controlled and signalled crossing. The old disc signals were still in use, working in conjunction with the gates.

The scenery became magnificent, the Maentwrog Valley opening out as we climbed slowly along the hillside, eventually rounding the horseshoe curves into Tan-y-Bwlch Station. We had stood there on the right-hand loop for only a few minutes when a gravityworked slate train rounded the curve and clattered through the station. This was a wonderful sight, as anything up to a hundred trucks, with their brakesmen controlling the speed, disappeared into the cutting.

A shrill whistle and we were off again, and were soon through the short tunnel and into the Vale of Festiniog with its distant views. Dduallt Station was passed and we entered Moelwyn Tunnel open coaches were to be avoided on the up journey as they filled with thick black smoke from the double exhausts of the locomotive in the narrow confines of the tunnel.

The scenery now became rather barren, and slate appeared on the hillsides as we approached Blaenau Festiniog. We stopped at the L.M.S. Station where most of the passengers alighted for the Conwy Valley line to Llandudno Junction, and then proceeded to the terminus at the G.W.R. station about ¼-mile further on, arriving on time at 11.26 a.m. A petrol tractor shunted the slate trucks and the Fairlie ran around the train. At 11.45 a.m. we moved off to the L.M.S. Station where a large crowd was waiting. The guard and station staff were fully occupied locking all the doors and we departed with a very full train.

The locomotive was able to coast or work very lightly for most of the way down, and the scenery could be enjoyed with very little smoke obscuring the view. The Welsh station-mistress in national costume appeared again at Tan-y-Bwlch, as on the up journey, selling sweets and chocolate. Eventually we departed once more, and after a beautiful run through "faeryland" as the posters described it, we arrived at Minffordd. After a brief stop, we set of for Portmadoc again, and arrival there was punctual at 12.50.



Photo : Simplex on works train and *"Prince"* on passenger train at Portmadoc, September 1956. Photo M.Swift, block Turnbridge News.



Photos (upper) : "Prince" on up train passing Boston Lodge Halt. Photo M.Swift, block Turnbridge News

(lower) : Down train with *"Taliesin"* on Penrhyn level crossing, summer 1960. Photo R.T.Coope/FRS, block courtesy Festiniog Railway Magazine.

THE SANDWELL PARK COLLIERY TRAMWAY

C.H.Betts

West Bromwich is a large town, a county borough of some 90,000 souls, on the south border of Staffordshire. Its principal claim to fame lies in the fortunes of its football team and, in the industrial field, it has long been noted for the production of springs. There is a good deal of heavy industry in the area, and some coal mining.

Two main lines of the former LNWR pass within its borders, as does the main line of the former GWR from London to Shrewsbury and Chester. In fact, in pre-war days there were no less than eight stations within its boundaries. There are also several canals and to this day a good deal of coal is transported by canal.

Jubilee Colliery if the daughter colliery of Sandwell Park whose three shafts were sunk in the 1870's. When working started, however, it was found that the coal could be more economically worked by the sinking of further shafts at a point two miles away, and, as the project was planned in the year of Queen Victoria's Jubilee, it was called Jubilee Colliery. The old shafts at Sandwell Park ceased to wind coal in 1914 but the transport facilities there were quite exceptional and have continued in use ever since. Jubilee Colliery, on the other hand, is somewhat remotely situated and has no rail or canal facilities.

Thus it was that, to provide access to the Birmingham Canal, a two-foot gauge, double-tracked, cable-operated tramway was laid between the colliery and the canal, a distance of a little over two miles. This tramway, though never operated by independent motive power, has a number of interesting features worth recording. The term 'tramway' incidentally, is that used on the Ordnance Survey Map; if readers object to this term because they think it refers to something else, they are referred to an interesting article in the January 1960 Journal of the Railway & Canal Historical Society, called 'Indefinable Railway Terms'.

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Sketch Map of Jubilee Colliery Tramway, West Bromwich



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The accompanying sketch map shows the original layout of the line. It was operated in three different sections; the longest one, of about 1½ miles, ran southward from Jubilee Colliery to the point marked 'B' on the sketch map, where it was joined by a branch from the now defunct Sandwell Colliery. At this point the line turned south-west and there was a further stretch, of double line, about 200 yards in length to the top of the canal embankment. The third stretch of line, which was single, ran down the embankment to the level of the canal.

Of recent years, the line has terminated at a point just beyond where the tramway crosses the GWR main line. here a coal dump has been established, to which there is a constant procession of coal merchants' lorries, the road here giving good access. It is interesting to speculate why, when it became apparent that there was a demand for road haulage loading facilities, in addition to canal and rail, the tramway with its smallcapacity tubs was not abandoned. To the uninitiated observer at any rate, it appears probable that lack of dumping space at Jubilee Colliery, coupled with the difficulty of approach winding country lane, ensured the continued use of the tramway.

Haulage is at present effected by a continuous steel ground ropeway, operated by a 20hp. electric motor situated at the Jubilee Colliery end. This was installed in 1936 and replaced chain haulage driven by a steam engine, the tubs being fitted with a fork at the top of the body to receive the links of the chain.

Tubs of a standard type in use underground are used on the tramway. They are hauled to the surface, the coal os screened and washed, and they are then reloaded before being pushed onto the tramway, marshalled in threes or fours and attached to the steel rope by means of chains fastened at each end of the rake. The speed is less than 5mph; direction of traffic is on the right-hand line instead of the main-line railway practice of left-hand running. As might be expected, the line is well fenced throughout, for the dual purpose of preventing injury to would-be trespassers and the loss of coal through theft.

From Jubilee Colliery, where there are some sidings, the tramway proceeds in a straight line to the present terminus and, for the greater part of its length, passes through countryside which is surprisingly rural. There are three substantial brick-built overbridges on this section though none carry road traffic; there is also a tunnel.

Travelling in a southerly direction, the line passes through an uncultivated, marshy stretch of land known as Warstone Fields, and close by Sandwell Farm. Until the Priory overbridge is reached, the gradient remains almost level, at least as far as the eye can tell as there are no gradient posts. Just here the line, which is in a shallow cutting, is bounded by a plantation, and in springtime is a most pleasant spot.

Immediately after passing under the bridge, the line begins to rise quite sharply. To the west of the track the fields continue but to the east lies Sandwell Golf Course and the long road which was once the drive to Sandwell Hall, long since pulled down; this road continues to the main Birmingham road. At about a mile from the colliery the summit is reached, and immediately the gradient falls again, but in a matter of a few yards the track becomes spanned by iron hoops covered with corrugated irons sheeting. Since the ground on each side of the line is rising rapidly, no doubt the covering is intended to foil potential coal thieves.

There is a little over 90 yards of this cover and then the line enters a tunnel some 240 yards long. This is a substantial piece of civil engineering, being brick lined and about six feet high, the entrances supported by iron girders. The low height of the tunnel precludes the use of any independent form of motive power. The tunnel passes under the drive already referred to, and the A41 Birmingham Road.

The portion of the line in cutting immediately beyond the tunnel was, until recently, roofed with Welsh slates but these have now been removed. The lie of the land continues to fall and, by the time the bridge over the GWR Main line is reached, the tramway is on an embankment perhaps ten feet high.

The present terminus is a few yards beyond the railway bridge but is hidden from the nearby road (Roebuck Lane) by a tall, corrugated iron building, used for handling the coal. Here the loaded tubs are unhitched from the cable, emptied, and sent back in the reverse direction, half-a-dozen at a time. The cable is reversed, as might be expected, by turning it on a large wheel. From this point (marked 'A' on the sketch map) to point 'B', the coal is transported on a conveyor belt, installed in 1938, which follows very closely the path originally taken by the tramway. It was here joined by lines from Sandwell Park Colliery, the older mine referred to at the beginning of this article. The colliery stood in a traingle of land bounded on the north by the GWR main line, on the west by the colliery tramway, and on the east by the GWR branch from Handsworth Junction to Stourbridge. Although the colliery has been defunct for many years, the current 6" Ordance Survey map shows a maze of lines in the triangle, but a recent survey of the area on foot failed to reveal any trace whatsoever of these lines, the area now being a series of mounds of pit waste.

To the north of the triangle, there were standard-gauge sidings serving the colliery, alongside which the narrow-gauge lines ran. These sidings were controlled at the south end by Handsworth Junction Signal Box, and at the north end by a ground frame, Sandwell Park G.F. Although the sidings are still in place, the ground frame has long since been removed.

From Point 'B', the tramway continued under Roebuck Lane and a few yards further on ran through a short brick tunnel. At 'B' and 'C' (the top of the canal embankment) men were stationed to unhitch the tubs, manhandle them round corners, and re-hitch them to the next stretch of cable. The final length of line merely extended down the steep incline to the canal and was single-tracked; this incline is no longer in use, coal reaching the canal by means of a vertical conveyor belt.

The 6" O.S. map shows the tramway as extending down each side of the incline, i.e. both to the right and left, joined by a length of track along the tow-path, but a careful examination of the site failed to reveal any trace of track on the right-hand incline, in contrast to the left-hand side, where traces of the two-foot track still remain.

Even to railway enthusiasts, this line may appear to be of little significance, with its lack of independent motive power, yet it is a good example of how a colliery, awkwardly placed for transport facilities, solved the problem of getting coal to the canal and railway, and how in due course the line was adapted to meet the needs of road transport.

<u>Note</u> : since this article was written, Jubilee Colliery has closed. On 15^{th} October 1960, a fortnight after closure, all tubs had been removed from the tramway, though the cable and track remained.

Photos: (below) - trains of tubs passing through the countyside

(next page) - the canal wharf. Note the old incline on the right of the picture.

(photos and blocks C.H.Betts)





EARLY LOCOMOTIVE DESIGNS OF THE FESTINIOG RAILWAY

courtesy Festiniog RailwayMagazine

A short while ago, the F.R.Magazine started a series of articles describing the attempts at locomotive design, mainly by C.H.Holland, which preceded the building of the England tank engines. We thought these notes might appeal to those of our members who do not belong to the F.R.S., and so, through the kindness of the F.R.Magazine, we are reprinting the first article by their Archivist, Mr. M.Seymour. We hope to print others later. (Compiler's note - it would appear that in the event this intention was never realised).

The first letter in the collection of papers relating to this subject, is a draft of a letter from C.E.Spooner to C.M.Holland, dated 9th April 1861. In this, Spooner sets out some of the problems that need to be faced in the design of a suitable engine. (C.M. Holland had suggested a four-wheeled engine with a 4'4" wheelbase to S.Holland, in November 1860), Spooner demands a limit on weight of five tons, and prefers an engine with tender and tank separate. One point, which recurs throughout the correspondence, is the need to keep the centre of gravity low, because of the sharp curves and narrow gauge; Spooner goes so far as to suggest an oval boiler with wheels recessed into the boiler plates. The engine is to have outside cylinders and inside valve-gear: the method of working envisages loads of 30 tons, an up speed of 8mph and a down speed of 10mph, the engine and tender following down uncoupled. For this three engines are required. These conditions were the basis of the designs worked out by Charles Holland.

The next letter, dated 28th August, mentions a design submitted by a Mr. Jones of Liverpool, an extraordinary single-cylinder tender engine. Charles Holland does not commend it. In his letter of 1st September, he argues in favour of a tank engine, and on the 7th he writes to explain in greater detail the trunk cylinder and coupling-rod arrangement of his first design, and advocates the use of an injector rather than a feed pump.

<u>The First Design</u>. This is dated 28th August 1861. Marginal notes state : "Sketch of locomotive engine for Festiniog Railway. Sundry particulars : Speed of engine 8-14 mph. Max. consumption of coke = 158lbs/hr. Maximum ditto of water = 19cu.ft/hr. Tank holds about 9cu.ft of water. Effective Horsepower = 38. Load in tons about 180. Price, inclusive of 'Giffards Injector' £720. The boiler will be a little higher than drawn on plan, it is shown about three feet but whereas it will be 4'6". This may make a difference in price of engine - so call total cost £750."

This first design is drawn to a scale of 2" to the foot and shows a horizontal sectioned elevation, reproduced with this article, and a plan view as well. The design proposes a vertical boiler set centrally on a frame carried on four wheels of 2'9" diameter on a wheelbase of 4'6". The frames are curved out around the lower part of the boiler and the trunk cylinders, of 8" effective diameter x 12" stroke, are set outside the boiler centre line; the steam chests are on top of the cylinders.

The curious arrangement of two connecting rods and an auxiliary crosshead is the necessary outcome of the cylinders' central position, and the valve gear has also to be mounted at one end to clear the boiler. The whole engine above the frames is surrounded by low sheet-metal sides, and the water tank is placed at one end of the longditudinal centre line; the coke supply would presumably be placed with the driver at the other end. The boiler and steam pipes are not shown in great detail; the boiler apparently has a large firebox at the bottom, from which very short, wide-diameter tubes lead to a combustion chamber exhausting straight up the chimney. It seems that exhaust steam is led into the base of the chimney, though no blast pipe is shown. The chimney has had to be shortened to get the cap on the drawing, but it is intended to reach a height of 8'10" above rail level.

It seems likely that this boiler design would have shown defects in service, by reason of its inaccessibility and the atmospheric corrosion of its internal plates; the layout of cylinders and motion would seem likely to have proved a great source of weakness in operation. The dimensions and power of the design are calculated according to the conditions laid down by C.E.Spooner in the first letter, but it is clear that this design would have been quite incapable of coping with the increase in traffic which actually took place. It is as well that no decision was taken to build this odd machine; however we must not forget that the general design principles and certain dimensions persist throughout the projects and specifications, and were in fact embodied in George England's two engines in 1863.

BOOK REVIEWS

British Narrow Gauge Steam

- compiled and published by Frank Jux, 18 Cedar Terrace, Richmond, Surrey. 20pp. 16 photos. Demi 8vo.

This is a useful little booklet listing all the remaining narrow gauge steam locomotives in the British Isles including those derelict or semi-derelict and also preserved locomotives. It should prove a mine of information to those interested in this subject, and so it is all the more annoying that odd inaccuracies have been allowed to creep in - such as calling Parrish's No. IV "No.1" and merely describing it as "near standard gauge" a vague term; or not indicating the Waltham locomotives as being out of use; and there are others. Why, too, call the Festiniog 60cm gauge, which it is not, while converting the continental gauge of the Snowdon line into English units?

Generally, however, the book is well produced by some form of lithographic process, with illustrations of fairly high quality, and if the price of 4/- does seem a little high it is almost inevitable with a privately-produced publication of this nature.

A NEW NARROW GAUGE PROJECT IN FRANCE

Le Chemin de Fer Touristique de St. Trojan le Bains.



Members will have seen in the news-sheet that a new light railway - the C.F.Touristique de Meyzieu - is under construction in France (we hope, by courtesy of its proprietor, M. Arrivetz, to give further details in a future issue) but they may not know that yet another railway is under active consideration.

This is a project for a tourist line on the Ile d'Oleron, off the Atlantic coast of France a little to the south of La Rochelle. This island once had a metre-gauge line, now deposed, operated by the C.F.Economiques des Charentes, but the new line will not follow the same route. The idea is to link the port of St. Trojan - point of arrival for the ferry steamers - on the S.E. tip of the island, with the excellent and well-patronised beaches in the S.W. corner. The project has arisen because the island's attractions are being increasingly realised by tourists, and the roads are at present quite inadequate to take the extra traffic.

The railway, of 60cm. gauge, is intended to stretch for six and a half kilometres along the southern tip of the island. The proposed route runs inland, due west from St. Trojan, for about two km. before swinging south and then west again to reach the coast at Gatseau Beach. It then cuts across the dunes to reach the Atlantic coast with its wide beaches.

Since the line passes through a pine forest, it is necessary to obtain the consent of the Forestry Department, which is at present considering the situation. It is hoped that they may agree to the line being built, especially as it might be of some assistance to them in reporting and fighting fires - plans are already afoot to provide a special fire-fighting train and even to install short-wave radio transceivers on the locomotives.

Stock and track

To satisfy the forestry authorities, the 'locomotives' will in fact be 22hp. Jung diesel tractors dressed up, it is said, in "Far West" style - though whether this means "Disneyland"-type steam outline, or diesel-electric, remains to be seen! The passenger coaches will be open-sided bogie toast-racks, of the Decauville Type KE, once a very popular type of coach on the smaller 60cm.-gauge lines. The track will initially be 9.5kg/m 'jubilee' type with steel sleepers but it is anticipated that certain sections may be relaid in heavier rail later on. Gradients will not exceed 1 in 50, and curves will not go below 30 metres radius except within depot limits.

One hopes that this little line will receive the blessings of the Forestry people - it is apparently already welcomed by the Local Authorities and the citizens - and provide a pleasant change in this era of closing lines.

(Note - we are indebted to "Loco-Revue" for much of the information contained in this article)